AMENDMENT

Claims 1-30 remain in the application. Claims 1, 5-6, 8, 10-11, 15, and 17-18 have been amended. New claims 22-30 have been added. No claims have been canceled. Please replace the existing claims with the following set of claims:

1. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

establishing a session at a data link layer between a host and a remote access concentrator;

determining a set of network layer information corresponding to the session; and

applying the set of network layer information to the host at the data link layer to insert a route to the one of a plurality of content servers identified by the set of network layer information.

2. (Original) The machine-readable medium of claim 1 wherein the session is a Point to Point Protocol over Ethernet session.

3. (Original) The machine-readable medium of claim 1 further comprising:

establishing a second session at the data link layer between the host and the remote access concentrator;

determining a second set of network layer information corresponding to the second session; and

applying the second set of network layer information to the host at the data link

layer.

4. (Original) The machine-readable medium of claim 1 further comprising:

establishing a second session at the data link layer between the host and a second remote access concentrator;

determining a second set of network layer information corresponding to the second session; and

applying the second set of network layer information to the host at the data link layer.

5. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

establishing a first session with a data link layer protocol between a host and a first remote access concentrator;

determining a first set of network layer information for the first session;

establishing a second session with the data link layer protocol between the host and a second remote access concentrator without terminating the first session; and

determining a second set of network layer information for the second session.

6. (Currently Amended) The machine-readable medium of claim 5 wherein the second remote access concentrator is the first remote access concentrator.

7. (Original) The machine-readable medium of claim 5 wherein the data link layer protocol is Point to Point Protocol over Ethernet.

8. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

establishing a communications session between a host and a remote access concentrator under a first of a plurality of accounts;

retrieving a set of network layer information corresponding to the first account;

creating a message having the set of network layer information within a data link layer of the message;

transmitting the message from the remote access concentrator to the host;

extracting the set of network layer information from the message at the data link layer; and

applying the set of network layer information to the host.

9. (Original) The machine-readable medium of claim 8 wherein the communications session is a Point to Point Protocol over Ethernet session.

10. (Currently Amended) The machine-readable medium of claim 8 further comprising:

establishing a second communications session between the host and the remote access concentrator under a second of the plurality of accounts without terminating the first communication session;

retrieving a second set of network layer information, the second set of network information corresponding to the second ~~communications session~~account;

creating a second message having the second set of network layer information within a data link layer of the message;

transmitting the second message from the remote access concentrator to the host;

extracting the second set of network layer information from the second message; and

applying the second set of network layer information to the host.

11. (Currently Amended) The machine-readable medium of claim 8 further comprising:

establishing a second communications session between the host and a second remote access concentrator under a second of the plurality of accounts without terminating the first communication session;

retrieving a second set of network layer information, the second set of network information corresponding to the second ~~communications session~~account;

creating a second message having the second set of network layer information within a data link layer of the message;

transmitting the second message from the second remote access concentrator to the host;

extracting the second set of network layer information from the second message; and

applying the second set of network layer information to the host.

12. (Original) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

establishing a Point to Point Protocol over Ethernet (PPPoE) session between a host to a remote access concentrator, the PPPoE session being associated to an account;

determining a set of network information corresponding to the account in the PPPoE session; and

applying the set of network information to the host.

13. (Original) The machine-readable medium of claim 12 further comprising:

establishing a second PPPoE session between the host and the remote access concentrator, the second PPPoE session being associated to a second account;

determining a second set of network information corresponding to the second account; and

applying the second set of network information to the host in the PPPoE session.

14. (Original) The machine-readable medium of claim 12 further comprising:

establishing a second PPPoE session between the host and a second remote access concentrator, the second PPPoE session being associated to a second account;

determining a second set of network information corresponding to the second

account; and

applying the second set of network information to the host in the PPPoE session.

15. (Currently Amended) An apparatus comprising:

a storage to store a set of network layer information;

a communications module coupled to the storage, the communications module to establish a communications session at a data link layer and perform network control protocol negotiation for the communications session; and

a processing unit coupled to the communications module and the storage, the processing unit to create a message having a subset of the set of network layer information within a data link layer of the message and to transmit the message in the communications session to a host.

16. (Original) The apparatus of claim 15 wherein the communications session is a Point to Point Protocol over Ethernet session.

17. (Currently Amended) The apparatus of claim 15 further comprising:

the communications module to establish a second communications session; and

the processing unit to create a second message having a second subset of the set of network layer information and to transmit the second message in the second communications session.

18. (Currently Amended) A computer implemented method comprising:

establishing a session at a data link layer between a host and a remote access

concentrator;

determining a set of network layer information corresponding to the session; and

applying the set of network layer information to the host at the data link layer to insert a route to the one of a plurality of content servers identified by the set of network layer information.

19. (Original) The computer implemented method of claim 18 wherein the session is a Point to Point Protocol over Ethernet session.

20. (Original) The computer implemented method of claim 18 further comprising:

establishing a second session at the data link layer between the host and the remote access concentrator;

determining a second set of network layer information corresponding to the second session; and

applying the second set of network layer information to the host at the data link layer.

21. (Original) The computer implemented method of claim 18 further comprising:

establishing a second session at the data link layer between the host and a second remote access concentrator;

determining a second set of network layer information corresponding to the second session; and

applying the second set of network layer information to the host at the data link layer.

22. (New) A method comprising:

establishing multiple simultaneous PPPoE sessions for a single host to access a plurality of content servers through a set of one or more network elements, wherein one of the network elements in the set of network elements performs the following during the establishment of each of the PPPoE sessions,

accessing network information previously entered for an account associated to the PPPoE session, wherein different accounts for different ones of the plurality of content servers include distinguishing network information, wherein each of the PPPoE sessions is associated to a different one of the accounts,

creating a control protocol message with the accessed network information embedded, and

transmitting the control protocol message to the host.

23. (New) The method of claim 22, wherein the accessed network information is embedded in a data link layer of the control protocol message.

24. (New) The method of claim 22, further comprising:

storing the previously entered network information in a database.

25. (New) A method comprising:

a single host establishing multiple simultaneous PPPoE sessions for access to different ones a plurality of content servers through a set of one or more remote access concentrators, wherein different accounts for different ones of the plurality of content servers include distinguishing network information, wherein each of the PPPoE sessions is associated to a different one of the accounts,wherein the single host performs the following during establishment of each of the PPPoE sessions,

receiving from one of the set of remote access concentrators a control protocol message in which is embedded at least some of the distinguishing network information for the account accessed for the PPPoE session by the remote access concentrator, and

inserting a route to the one of the plurality of content servers identified by that network information.

26. (New) The method of claim 25, wherein the network information is embedded in a data link layer of the control protocol message.

27. (New) The method of claim 25, wherein the distinguishing network information is stored in a database that is external to the set of one or more remote access concentrators.

28. (New) A network environment comprising:

a host device to distinguish simultaneous PPP sessions based on messages having network data embedded within a data link layer of the messages;

a network element to communicatively couple the host device through a network to different ones of the plurality of content servers to access the database to create and trasmit the messages to the host;

a database to associate different network data to different ones of a plurality of content servers.

29. (New) The network environment of claim 28, wherein each message is unique to one of the content servers.

30. (New) The network environment of claim 28, wherein the network data is accessed based on account information provided by the host device.